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CONTINUITY SHEET FOR REEL #3  
ELEMENTS OF THE AUTOMOBILE.

MAY -2 1921

M T

Part 3

M T

The Bray Pictures Corporation  
presents  
"ELEMENTS OF THE AUTOMOBILE"  
by  
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Produced for  
The Education  
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under the supervision  
of the  
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Quartermasters Corps  
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M S

The Engine.

Sub

The duty of the engine is to turn the propeller-shaft  
which turns the rear axle and drives the rear wheels.

Sc 1

Long shot of car. Pointer indicates propeller-shaft.  
Action.

Sub

A simple engine will be constructed first.

Sc 2

Long shot of car. Dummy engine dissolves out.

Sub

The engine crankshaft drives the propeller-shaft.

Sc 3

Long shot of car. Single crank dissolves in. Action  
of crank and rear wheels.

Sub

The crank is rotated by the connecting-rod.

Sc 4

Long shot of car with single crank. Connecting rod  
dissolves in. Flash to close up of crank and con-  
necting rod. Action.

Sub

Motion is imparted to the connecting-rod by a piston.  
that moves up and down.

Sc 5

Close up of single crank and connecting-rod. Piston  
dissolves in. Action.

Sub

The piston slides in a cylinder.

Sc 6

Close up of piston, connecting-rod and single crank-  
shaft. Cylinder dissolves in. Action. Cylinder dis-

Sc 6  
Cont.  
Sub solves to section. Action.  
Power is applied on top of the piston.

Sc 7 Simple one cylinder engine and hammer. Hammer strikes top of piston several times. Flash to long shot of car, hammer striking top of piston.  
Sub Instead of hammer blows, explosions are used.

Sc 8 Close up of simple one-cylinder engine (no flywheel). Cap dissolves on. Action with explosion at each revolution. Flash to long shot of car with one cylinder engine. Action with explosions.  
Sub A flywheel is needed to keep the shaft turning until another explosion occurs.

Sc 9 Close up of one cylinder engine. Flywheel dissolves on. Action with explosions at every revolution.  
Sub The engine may be compared to a cannon.

Sc 10 Close up of cannon. Dissolves to sectional view.  
Sub Power.

Sc 11 Close up of cannon in section view. Powder dissolves in.  
Sub The ball.

Sc 12 Close up of cannon and powder. Ball dissolves in.  
Sub The powder is tightly compressed, so that it will be more effective.

Sc 13 Close up of cannon. Ramrod pushes ball tightly against powder.  
Sub When loose powder is burned, there is no explosion.

Sc 14 The bullet first being removed, the loose powder is spread out and then ignited.  
Sub If it is compressed and confined, and then ignited, an explosion results.

Sc 15 Powder is compressed and then ignited resulting in an explosion.  
Sub Igniting the powder <sup>in</sup> the cannon causes it to create a gas, which burns rapidly and pushes out the ball.

Sc 16 Close up of cannon with ball and powder. Cannon tilts upward. Fuse is ignited. Explosion takes place forcing out the ball.  
Sub The bore is now cleaned for another shot.



- Sc 17      Close up of cannon. Elevation is lowered. Ramrod cleans bore.
- Sub      The cannon could turn a shaft if the explosions could be made to occur regularly.
- Sc 18      Section of cannon. Flywheel, piston and crankshaft dissolve in. Actions with explosions. Pause. Cannon turns to vertical position. Then action with explosions.
- Sub      A few changes, and we have a gasoline engine.
- Sc 19      One cylinder (no valves). Action with explosions every other revolution.
- Sub      The explosive used is a mixture of gasoline and air. It comes in through the intake valve.
- Sc 20      Intake valve dissolves in. Pointer indicates it. Action of one stroke of piston. Pause. Pointer indicates intake valve is open. Also the course of gas (no gas shown). Piston makes another half stroke.
- Sub      After the explosion, the burned gas passes out through the exhaust valve.
- Sc 21      Exhaust valve dissolves in. (Piston in lower part of cylinder.) Pointer indicates course of exhaust. Piston goes up, valve closes.
- Sub      The valves are operated by a mechanism that will be explained later.
- Sub      As long as the valves are in the closed position the combustion chamber is air tight.
- Sc 22      Close up of engine, intake and exhaust <sup>pipes</sup> in, both valves are closed. Pointer indicates combustion chamber and that valves are closed.
- Sub      If the piston moves downward, with the valves still closed, suction is created in the chamber.
- Sc 23      Close up of one cylinder engine. Piston makes a half stroke. Pointer indicates chamber with both valves closed.
- Sub      Now if the intake valve is opened, the suction created by the piston draws in the gasoline and air mixture.
- Sc 24      Pointer indicates closed intake valve. Piston completes stroke. Inlet valve opens admitting gas. Pause.
- Sub      The piston acts as a suction pump.
- Sc 25      Piston up. Both valves are closed. Intake pipe dissolves out. Beaker and tube of liquid dissolve in. Piston goes down, sucking liquid into cylinder. Pause. Beaker dissolves out and intake pipe dissolves in.

Sc 25 Cont.    Pause. Action of piston sucking in gas.

Sub            As the piston moves upward it compresses the gas, just as the powder was compressed in the cannon.

Sc 26           Piston goes up compressing gas.

Sub            It is then ignited by an electric spark created at the spark plug.

Sc 27           Pointer indicates the spark plug. Explosion takes place.

Sub            As the piston moves upward this time, it forces out the burned gases through the exhaust valve thus cleaning the cylinder for a new charge.

Sc 28           Pointer indicates exhaust valve. Piston goes up pushing out burned gases. Pause.

Sc 29           Cartoon of men (2) carrying a sign which reads as follows:

Sub            End of Part 3.

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